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ABSTRACT

This study examined the metacognitive awareness and perceived attributions for academic outcomes for a population of at-risk college students. Participants in this study were 78 university students who, as a condition of re-admittance to the university, were required to enroll in an academic support course. All participants had a grade point average below 2.0 and were considered at-risk for completing their programs. Situation-specific questionnaires were used to assess participants' metacognitive awareness and reported attributions for successful and unsuccessful academic outcomes. The underlying attribution dimension studied was controllability. Results indicated that these at-risk students may be able to gain in metacognitive awareness as a result of instruction in academic study skills. A significant correlation between participants' metacognitive awareness score and total score for controllable attributions for success suggested that participants who tended to be more aware of their reading processes also tended to attribute success to causes within their control. Also, while students attributed academic success to note-taking and attending class, they did not attribute their academic failures to the lack of these activities. Findings suggested the need for training in metacognitive awareness and attribution training within academic support courses. (Contains 38 references.) (JB)

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Running Head: Metacognitive Awareness and Attributions

Exploring Metacognitive Awareness and Perceived Attributions for Academic Success and Failure: A Study of At-risk College Students

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Abstract

This study examines the metacognitive awareness and perceived attributions for academic outcomes for a population of at-risk college students. Situation-specific questionnaires were used to assess participants' metacognitive awareness and reported attributions for successful and unsuccessful academic outcomes. The underlying attribution dimension studied was controllability. Results indicated a correlation between participants' tendency to attribute success and failure to causes within their control and participants' metacognitive awareness for reading. Other results reveal interesting patterns in terms of specific attributions participants identify for successful and unsuccessful academic outcomes. Findings suggest the need for training in metacognitive awareness and attribution training within academic support courses.

As we move into the next century, the need for instructional support for at-risk college students will continue to be of paramount importance (Wyatt, 1992). As Brown and Campione (1990) indicated, the demands of a technologically advanced society require "complex forms of literacy" (p. 108) and that among other skills, educated individuals must be able to read critically and to clearly articulate in both written and oral language. However, there is evidence to suggest that many college students lack the basic skills necessary to be successful in the college environment (Moore & Carpenter, 1985). Simpson (1984) and Simpson and Nist (1990) reported that first-year college students have limited repertoires for interacting with text. Aaron and Joshi (1992) point out that increasing numbers of students entering colleges with either learning or reading disabilities will cause a need for support programs for such students.

Support programs often take the form of isolated skill instruction which may not be sufficient for college-bound adults experiencing reading difficulties (Nicaise & Gettinger, 1995). College learning environments place huge demands on college students who experience reading difficulties. Such at-risk students typically suffer from low self-esteem and often cannot understand why they are not successful in college courses. Examining the perceptions such students have about their own learning provides insight for educators seeking to improve academic support for these learners. The purpose of this study was twofold: a.) to examine at-risk college students' metacognitive awareness for reading and writing tasks and b.) to examine specific attributions identified by these learners for academic success and failure.

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Related Literature

Theories describing the notion of self-regulated learning (i.e. Schunk, 1991) have suggested that self-regulated learning involves both metacognitive awareness and motivational control (Bruning, Schraw & Ronning, 1995). Metacognition has come to be defined as the awareness and regulation of cognitive activity (Baker & Brown, 1984; Flavell, 1976; Flavell, 1978; Flavell, 1993; Flavell & Wellman, 1977). In particular, metacognition has become a defining characteristic of an active learner who exercises control over the learning process (Mayo, 1993). Brozo and Simpson (1995) identified metacognitive awareness as characteristic of an active reader. Active readers activate prior knowledge to facilitate comprehension, are sensitive to how ideas are organized in text through understanding text structure, elaborate on information presented in text, and use metacognitive awareness to orchestrate all these processes (Brozo & Simpson, 1995). Empirical studies have shown that metacognitive awareness is linked to reading comprehension among children (Paris & Myers, 1981; Paris & Jacobs, 1984; Brown & Day, 1983; Paris, Cross, & Lipson, 1984). Other studies have examined this relationship among college students (Gambrell & Heathington, 1981; Hare & Pulliam, 1980; Balajthy, 1986; Brozo, Stahl, & Gordon, 1985) In general, research shows that metacognitive skill is central to effective reading (Baker & Brown, 1984; Hare & Pulliam, 1980; Paris, Wasik & Turner, 1991; Mealey & Nist, 1989).

While metacognitive awareness earmarks strategic readers, it also has also been identified as characteristic of effective writers. Englert, Raphael, Fear and Anderson (1988) studied the metacognitive knowledge learning disabled and non learning disabled children have about writing. They found evidence to suggest that learning disabled children do lack the metacognitive

knowledge needed to regulate the writing process and that specific metacognitive behaviors correlated with writing performance. Raphael, Englert and Kirscher (1989), who studied fifth and sixth graders' metacognitive knowledge about writing as a function of types of writing instruction, found that metacognitive awareness could be increased through instruction and that this increase in metacognitive knowledge contributed to writing performance.

It is important to consider theoretical scholarship which integrates reading and writing as related cognitive endeavors. The interfacing of theories of reading and theories of writing has become a focus in literacy research in the last decade (Harris & Sipay, 1990). Shanahan (1990) pointed out that reading and writing share common skills and recommends teaching reading and writing together because teaching students to use reading and writing in concert, allows them to use both reading and writing as powerful cognitive tools to promote more critical thinking.

The idea that reading and writing share cognitive processes is also discussed by Wittrock (1983) who indicated that good readers and good writers create meaning by building a relation between the information in the text and what they know already. Similarly, Kucer (1987) and Tierney and Pearson (1983) have stressed reading and writing as processes by which a learner constructs meaning. Flood and Lapp (1987) linked reading and writing to oral language ability, and indicated that both reading and writing involve cognitive and metacognitive activities.

The exact nature of the reading writing relationship is still being defined. However, at this point scholarship on reading and writing suggests both as processes demanding a certain level of cognitive and metacognitive

skill. The awareness of oneself as a reader or writer has been shown to be a key component of success at the reading or writing task.

Because recent cognitive theory has linked metacognition and motivation, it is fitting to study the interplay between these two constructs. Borkowksi, Carr, Rellinger, and Pressley (1990) have indicated that " . . motivational correlates of metacognition include positive self-esteem, an internal locus of control, and constructive attributional beliefs about the causes of success and failure" (p. 58). They argued that these correlates are "bi-directional" and each contributes to the development of the other. Skilled learners tend to show evidence of metacognitive awareness and to attribute success to effort and use of strategies (Bruning, Schraw & Ronning, 1995). Similarly Pintrich and others have pointed out that perceptions of competence correlate with use of cognitive and metacognitive strategies (Pintrich, 1980; Pintrich & DeGroot, 1990). It follows, therefore, that students' perceptions of their competence along with perceptions of what they attribute to success and failure are important to study in the context of examining metacognitive awareness.

Methodology

Participants

Participants for this study included 78 university students who as a condition of re-admittance to the university were required to enroll in an academic support course. Three cohorts of participants made up the entire study. Cohort One (32 students) completed the academic support course during the summer semester while cohort two (22 students) and cohort three (24 students) completed the course during the fall semester. All participants had a GPA below a 2.0 (based on a 4.0 scale). They are considered to be' students at-risk for completing their programs by university officials.

Students may elect to take the course regardless of their academic standing and GPA. In this study two students elected to take the course. The demographic breakdown of the participants is as follows: Of the 78 participants (52 male and 26 female), the majority of the participants were White (70.5%), while a minority were African-American (17.95%), Hispanic-American (7.69%), and Asian-American or Eastern Indian (3.85%).

This program provides academic support for students returning from academic suspension through a study strategies course. Instruction is designed to strengthen students' study habits. The course targets skills and techniques designed to increase students' academic success. The curriculum includes teaching students about learning styles inventories and time management techniques. The course also includes instruction in the Cornell note-taking method, SQ4R reading strategy, and various test-taking strategies. The skills are introduced in lecture format and student activities are designed to help students apply these techniques in their coursework.

Instrumentation

Assessment of Metacognitive Awareness for Reading

A 45-item questionnaire was used to assess participants' metacognitive awareness for reading. Participants were asked to read each of five scenarios which represented a college student's confrontation with a reading task. Within each scenario, "Vicki," the college student, is faced with a difficult chapter to read from a sociology textbook. The intent of these scenarios was to elicit responses from students about strategies they may or may not use before, during, and after reading a passage. After readirg the scenario the participants responded to the following question, "If you were Vickie, would you . . ." and were asked to respond by checking "yes" or "no"

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to various questions representing either strategic, very strategic or non-strategic reading activities (scored as 1, 2, and 0 respectively) A response of "yes" to a strategic activity would be scored as a 1, a "yes" response to a very strategic activity would be scored as a 2, and a "yes" response to a non-strategic activity would be scored as a 0. A "no' response to either a strategic or very strategic activity would be scored as a 0 and a "no" response to a non-strategic activity would be scored as a "1" For each scenario students responded to three non-strategic activities, three strategic activities and three very strategic activities. Therefore for each scenario the highest possible score was 12 and the range on the metacognitive questionnaire for reading was 0 to 60. The first four scenarios represented either the before, during, or after reading phase, while the last scenario assessed participants' awareness of text structure.

A similar series of scenarios was created to assess metacognitive awareness for writing. Students were introduced to "Joel," a college student faced with an essay-writing task. Once again, the scenarios reflect each of three phases of the writing process (before, during, and after). Participants were asked what they would do if they were in Joel's situation and responded with either "yes" or "no" to three non-strategic, three strategic, and three very strategic activities. The range on this questionnaire, just as on the questionnaire of metacognitive awareness for reading, was 0 to 60.

Assessment of Attributions for Successful and Unsuccessful Academic Outcomes

An important component of motivation are the reasons to which students attribute success or failure on academic tasks. Weiner (Weiner, 1986) identified specific attributions such as ability, effort, luck, task difficulty, and teacher and identified three underlying causal dimensions of stability, locus, and controllability. This study focused on the controllability dimension. In creating the questionnaire to assess participants' attributions for successful and unsuccessful academic outcomes specific attributions from the literature were chosen (i.e. ability, task difficulty, luck, and teacher) and other attributions were identified by an academic instructor within the academic support program. The instructor identified attributions based on interactions and interviews with students enrolled in academic support courses from previous semesters. Attributions identified by the instructor included personality, seeking help, writing, reading, note-taking, attending class, studying, and interest level of the material. It should be noted that seeking help, writing, reading, note-taking, attending class, and studying are all components of effort. Each attribution was identified as either controllable (seeking help, writing, note-taking, attending class, reading, and studying) or uncontrollable (ability, personality, task difficulty, luck, teacher, and interest level of material).

After identifying the specific attributions of interest, a questionnaire was created to assess participants' attributions for successful and unsuccessful academic outcomes. The first component of the questionnaire, requested that the participants think back to an experience in which they felt successful as they were learning and that the experience should

characterize their successful learning experiences in general. Participants were then asked to rate each of twelve attributions which were either within their control or outside their control. Participants rated each attribution as either a high reason for the academic success (scored as 2), a moderate reason for academic success (scored as 1) or as not a reason for academic success (scored as 0). Thus, the range for each attribution was 0 to 2. The second component of the questionnaire was similar in form, however, the students responded by rating each attribution as a cause for an unsuccessful academic outcome. Therefore, the instrument was able to capture the extent to which participants perceived a particular attribution to be the cause of a successful academic outcome or an unsuccessful academic outcome.

For each participant a total score of the extent to which the subject attributed academic success to controllable causes was created by adding ratings for each controllable attribution. A similar total score of the extent to which the subject attributed academic success to uncontrollable causes was created by totaling ratings for uncontrollable attributions. Similar scores were generated for academic failures. The extent to which participants attributed failure to controllable causes was measured totaling ratings for controllable causes of academic failure. The extent to which participants attributed failure to uncontrollable causes was measured by totaling ratings for uncontrollable causes of academic failure. Therefore four attribution scores were generated for each participant: a) total ratings on controllable causes for academic success; b) total ratings on controllable causes for academic failure; c) total ratings on uncontrollable causes for academic success; and, d) total ratings on uncontrollable causes for academic failure.

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Procedures

During the initial week of the academic support course, the participants completed the metacognitive awareness for reading questionnaire as well as the metacognitive awareness for writing questionnaire. The students also completed the questionnaire assessing attributions for successful and unsuccessful academic outcomes during the initial week of the course. The participants then received the standard study skills instruction deemed appropriate by the university for assisting at-risk college students in academic support courses. Students received instruction over eighteen eighty-minute class sessions. After the instruction was completed, participants responded once again to both the metacognitive awareness questionnaires for reading and writing and the attribution questionnaire.

Results

Metacognitive Awareness

Means and standard deviations for participants' metacognitive awareness scores for reading and writing for both trials (initial and final weeks) are reported within Table A below. Results show that participants tended to have higher metacognitive awareness scores for writing than they did for reading. Results also show that scores for metacognitive awareness of reading tended to increase over the duration of the academic support course.

Table A

Means of Scores on Metacognitive Awareness

	Initial Week		Final Week	
	M	SD	M	SD
Reading	35.62	8.89	42.79	7.79
Writing	48.28	4.90	48.93	5.04

Attributions for Successful and Unsuccessful Academic Outcomes

Participants' mean total scores for controllable and uncontrollable attributions across academic success and academic failure are reported by Table B below:

Table B

Means of Scores of Controllable and Uncontrollable Attributions

	Initial Week		Final Week	
Attributions for Successful Academic Outcomes				
	M	SD	M	SD
Controllable	5.91	2.62	7.76	2.15
Uncontrollable	5.89	2.39	5.89	2.37
Attributions for Unsuccessful Academic Outcomes				
	M	SD	M	SD
Controllable	5.92	3.42	4.47	2.57
Uncontrollable	5.56	3.11	4.47	2.57

In examining the mean scores on each individual attribution some interesting patterns emerged. In terms of causes for successful academic outcomes identified by the students during the initial week of the course, the three attributions with the highest means include: the teacher (M = 1.33 SD = .75), attending class (M = 1.45 SD = .70), and that the material is interesting (M = 1.47 SD = .68). Results on the same variables assessed during the final week of the course indicate that the three highest means include the teacher (M = 1.33 SD = .75), taking notes (M = 1.39 SD = .71), and attending class (M = 1.72 SD = .55).

In examining causes for unsuccessful academic outcomes identified by the students during the initial week of the course, the three attributions with the highest mean scores include: task difficulty (M = 1.17 SD = .79), lack of seeking help (M = 1.21 SD = .75), and lack of studying (M = 1.24 SD = .75). Results on the same variables assessed during the final week of the course indicate that the three highest means include: lack of doing reading (M = 1.01 SD = .74) lack of interest in the material (M = 1.05 SD = .76) and lack of seeking help (M = 1.27 SD = .74).

It is interesting to note that while academic success tended to be attributed to attending class, academic failure did not tend to be attributed to lack of attending class. A similar pattern was noted on the attribution of note-taking. While participants attributed success to taking notes during both the inital and final weeks of the course, they did not attribute academic failure to the lack of taking notes. It was also interesting to acknowledge that while the attribution of ability tended to have a reletively high score in participants' ratings of this attribution for academic success, it recieved a very low score in participants' ratings of this attribution for

academic failure. Furthermore, while lack of seeking help tended to be attributed to academic failure, seeking help tended not to be attributed to academic success.

In addition to providing descriptive information on the metacognitive awareness and perceptions of successful and unsuccessful academic outcomes for this population of at-risk college students, this study sought to investigate the possibility of a relationship between attributions for success and failure and metacognition. Scores on total controllable attributions and metacognitive awareness were correlated. Results indicated a significant correlation between participants' controllable attributions score assessed during the initial week and participants' metacognitive awareness score for reading also assessed during the initial week $r(73) = .35$ $p = .002$. A similar pattern was seen in both metacognitive awareness for reading and controllable attribution scores which were assessed during the final week of the course $r(74) = .39$ $p = .0005$.

Discussion

This study sought to examine both metacognitive awareness and specific attributions for both successful and unsuccessful academic outcomes for a special population of at-risk college learners. Results indicate that such students may be able to gain in metacognitive awareness as a result of instruction in academic study skills. A significant correlation between participants' metacognitive awareness score and total score for controllable attributions for success suggests that participants who tend to be more aware of their reading processes also tend to attribute success to causes within their control. This finding lends credence to the theoretical argument posed by Borkowski et al. (1990) and Bruning et al. (1995) that strategic learners who have metacognitive awareness also would also tend to attribute success to

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causes within their control and more specifically to strategy use. Such an argument would advocate the inclusion of attribution training in which learners are taught to attribute academic outcomes to causes within their control such as strategy use or other components of effort. Such training can assist learners in developing a sense of self-efficacy over academic tasks.

It is interesting to acknowledge the specific attributions participants identified for successful and unsuccessful outcomes. Participants reported that they would be successful at a task if the material proved to be interesting and that they would be unsuccessful at academic tasks involving uninteresting material. The captivating power of instructional materials is perhaps an attribution that has significance for this particular population and should be considered within scholarship on perceived attributions of academic outcomes among at-risk college students.

The patterns which emerged when examining specific attributions participants identified across successful and unsuccessful outcomes also pose some interesting implications for research and practice. In particular, while students would attribute academic success to note-taking and attending class, the lack of these activities would not be attributed to their academic failures. This finding causes one to wonder about the in-class listening strategies and note-taking strategies used by at-risk students when they experience unsuccessful outcomes. It could be the case that while these students attend class and do take notes in class, such students could afford to be more strategic in terms of listening and taking meaningful notes within the class. Again, metacognitive instruction combined with attribution training can promote a greater sense of self-efficacy on the part of these learners.

At-risk college students can profit by becoming more self-regulating of their own learning. Such academic support courses may be strengthened by attending to increasing metacognitive awareness and also by attending to attribution training which stresses the importance of attributing success or lack of success to causes within the students' control. The results of this study intend to inform such practice. Educators seeking to assist the at-risk college student can benefit from the insights generated by this study.

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